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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,504	03/11/2004	Eyal Shlomot	0160116	8326

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EXAMINER

WOZNIAK, JAMES S

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/799,504

Applicant(s)

SHLOMOT ET AL.

Examiner

James S. Wozniak

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. In response to the office action from 2/7/2005, the applicant has submitted an amendment, filed 2/23/2005, amending claims 1-21 and arguing to traverse the art rejection based on the limitations of claim 1 (*Amendment, Pages 11-13*). The applicant's arguments have been fully considered but are moot with respect to the new grounds of rejection in view of Gunduzhan et al (*U.S. Patent: 6,889,183*) and Klejin (*U.S. Patent: 6,169,970*).
2. Based on the amendments to claim 2, the examiner has withdrawn the previous objections directed towards minor informalities.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. **Claims 1-3, 5-6, 8-10, 12-13, 15-17, and 19-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gunduzhan et al (*U.S. Patent: 6,889,183*) in view of Klejin (*U.S. Patent: 6,169,970*).

With respect to **Claims 1 and 8**, Gunduzhan recites:

Obtaining a first current input speech frame (*receiving audio frames including empty or lost frames, Col. 4, Lines 9-23; and voice frames, Col. 1, Lines 50-61*);

Reconstructing said first current input speech frame from a previous input speech frame to generate a reconstructed first current input speech frame in response to an indication that said first current input speech frame has not been properly received (Col. 4, Lines 9-23; and Col. 5, Lines 16-25);

Obtaining a second current input speech frame immediately following the first current input speech frame (*following audio segment, Col. 5, Lines 26-44*);

Creating a new second current input speech frame by overlapping-and-adding the first and second speech frames (*overlapping and adding, Col. 5, Lines 26-44*).

Gunduzhan also discloses performing an overlap-add operation on the beginning of a second and valid audio segment received after a lost segment. Also, if a subsequent third segment was also valid, no overlap-add would be performed at the end of the second segment and, therefore, the second-third-frame intersection point would be maintained (*Col. 5, Lines 26-44*).

Gunduzhan does not specifically suggest a process of aligning pitch peaks prior to the overlap-add operation, however Klejin teaches a time-shifting operation that is functionally equivalent to the claimed time warping process (*Col. 9, Line 57- Col. 10, Line 14*).

Gunduzhan and Klejin are analogous art because they are from a similar field of endeavor in speech signal coding. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Gunduzhan with the time-shifting method

disclosed by Klejin to implement a smoother pitch cycle waveform (*Klejin, Col. 8, Lines 43-59*), since the aligning method taught by Klejin is based upon a major pitch pulse, which yields a minimum matching error between speech segments (*Klejin, Col. 10, Lines 10-14*).

With respect to **Claims 2 and 9**, Gunduzhan teaches speech segments having a pitch period (*Col. 4, Lines 44-58*).

With respect to **Claims 3 and 10**, Klejin teaches the pitch shifting operation that aligns major pitch pulses (*Col. 9, Line 57- Col. 10, Line 26*).

With respect to **Claims 5 and 12**, Gunduzhan teaches copying samples from a previous speech frame to reconstruct a lost speech segment (*Col. 4, Line 59- Col. 5, Line 15*).

With respect to **Claims 6 and 13**, Gunduzhan teaches that a previous speech frame immediately precedes a current speech segment (*Col. 4, Lines 24-31*).

With respect to **Claim 15**, Gunduzhan in view of Klejin teaches the speech frame error correcting method as applied to Claim 1. Gunduzhan further teaches method implementation as a program on a computer readable medium (*Col. 5, Lines 63-65*).

Claims 16, 17, 19 and 20 contain subject matter similar to Claims 2, 3, 5, and 6, and thus, are rejected for the same reason.

5. **Claims 4, 7, 11, 14, 18, and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gunduzhan et al (*U.S. Patent: 6,889,183*) in view of Klejin (*U.S. Patent: 6,169,970*), and further in view of Iijima et al (*U.S. Patent: 5,909,663*).

With respect to **Claims 4, 11, and 18**, Gunduzhan in view of Klejin teaches the speech frame error correcting method as applied to Claims 1, 8, and 15. Gunduzhan in view of Klejin

does not specifically suggest a fading operation, however, Iijima teaches such a process (*fading frames of speech data in and out, Col. 35, Lines 35-67*).

Gunduzhan, Klejin, and Iijima are analogous art because they are from a similar field of endeavor in speech signal coding. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Gunduzhan in view of Klejin with the speech frame fading method as taught by Iijima to implement more efficient speech post processing that provides a smoother transition between speech frames by eliminating undesirable noises that result from pitch variations between frames (*Iijima, Col. 35, Lines 35-50*).

With respect to **Claims 7, 14, and 21**, Iijima teaches a gradual fading process (*Col. 35, Lines 57-67*).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Kutaragi et al (*U.S. Patent: 5,086,475*)- teaches a method for reducing errors in block switching during decoding by utilizing time shifting.

Gersho et al (*U.S. Patent: 6,233,550*)- teaches a method for overlap-adding used to provide a smoother transition between speech frames.

Kwan (*U.S. Patent: 6,504,838*)- teaches a method for reducing discontinuity between a reconstructed and an original speech frame utilizing an overlap-add process.

Gao et al (*U.S. Patent: 6,581,032*)- teaches the use of pitch cycle overlap in order to avoid discontinuities between reconstructed or modified speech segments.


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632 and email is James.Wozniak@uspto.gov. The examiner can normally be reached on Mondays-Fridays, 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached at (571) 272-7582. The fax/phone number for the Technology Center 2600 where this application is assigned is (703) 872-9306.

Art Unit: 2655

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology center receptionist whose telephone number is (703) 306-0377.

James S. Wozniak
5/23/2005



W. R. YOUNG
PRIMARY EXAMINER